

CLAIMS

1. An exposure device for living cell cultures comprising a base portion, a top portion, fluid inlet means, fluid outlet means, medium inlet means, medium outlet means, a medium chamber and a plurality of cell culture chambers, wherein the medium chamber is common to all of the cell culture chambers.
2. An exposure device according to Claim 1, wherein said medium chamber has medium directing means therewithin.
3. An exposure device according to Claim 2, wherein said medium directing means is formed from a raised area of said base portion of said exposure device.
4. An exposure device according to Claim 2 or 3, wherein said medium directing means is an island within said medium chamber around which a nutrient medium may flow.
5. An exposure device according to any one of Claims 2 – 4, wherein said medium directing means is centrally located within said medium chamber.
6. An exposure device according to any one of the Claims 2 – 5, wherein said medium directing means is located equidistant to each of said cell culture chambers.
7. An exposure device according to any one of the preceding claims, wherein said exposure device comprises three cell culture chambers.
8. An exposure device according to any one of the preceding claims, wherein the base of each of said cell culture chambers is spaced apart from the base of said exposure device by means of a gap such that, in operation, nutrient medium flows freely under each of said cell culture chambers within said medium chamber.
9. An exposure device according to Claim 8, wherein said gap is at least 1mm.
10. An exposure device according to Claim 8 or 9, wherein said gap is about 2mm or more.
11. An exposure device according to any one of the preceding claims, wherein said medium inlet means is located in said base portion of said exposure device such that, in operation, medium flows directly into said medium chamber.
12. An exposure device according to Claim 11, wherein said medium inlet means is located in a side wall of said base portion of said exposure device.

13. An exposure device according to Claim 11, wherein said medium inlet means is located in a bottom wall of said base portion of said exposure device.
14. An exposure device according to any one of the preceding claims, wherein said medium inlet means is a pipe or a tube.
- 5 15. An exposure device according to any one of the preceding claims, wherein said medium outlet means is spaced apart from said medium inlet means.
16. An exposure device according to Claim 16, wherein said medium outlet means is spaced apart from said medium inlet means by all of said cell culture chambers and/or said medium directing means.
- 10 17. An exposure device according to any one of the preceding claims, wherein said medium outlet means is operable to remove nutrient medium from the top surface thereof.
18. An exposure device according to Claim 17, wherein said medium outlet means extends from the top portion of said exposure device into said medium chamber.
- 15 19. An exposure device according to any one of Claims 1 – 18, wherein said medium outlet means comprises two outlet means.
20. An exposure device according to Claim 19, wherein one of said outlet means is positioned to allow for basal feeding of said cell cultures, and the other of said outlet means is positioned to allow for submersion feeding of said cell cultures.
- 20 21. An exposure device according to any one of the preceding claims, wherein said medium outlet means is a pipe or a tube.
22. An exposure device according to Claim 21, wherein said medium outlet means is locked into said exposure device by locking means.
23. An exposure device according to Claim 22, wherein said locking means is a threaded screw arrangement having a central bore.
- 25 24. An exposure device according to Claim 22, wherein said locking means is a frictional locking means operable to adjust the position of said medium outlet tube.
25. An exposure device according to any one of the preceding claims, wherein said medium outlet means is operably attached to first pump means and said medium inlet means is operably attached to second pump means.
- 30 26. An exposure device according to Claim 25, wherein, in operation, said first pump means has a controllable first pump rate and said second pump means has

a controllable second pump rate and said first pump rate is at least equal to said second pump rate.

27. An exposure device according to Claim 26, wherein said first pump rate is greater than said second pump rate.

5 28. An exposure device according to any one of the preceding claims, wherein said exposure device further comprises a fluid exposure chamber.

29. An exposure device according to Claim 28, wherein said fluid exposure chamber is common to said cell culture chambers.

30. An exposure device according to Claim 28 or 29, wherein said exposure device further comprises fluid dispersing means.

10 31. An exposure device according to Claim 30, wherein said fluid dispersing means is operable to provide substantially contemporaneous fluid exposure to each of said cell culture chambers.

32. An exposure device according to Claim 30 or 31, wherein said fluid dispersing means is a disc-shaped plate above said cell culture chambers.

15 33. An exposure device according to any one of the preceding claims, wherein said fluid inlet means is located in said top portion of said exposure device.

34. An exposure device according to any one of the preceding claims, wherein said fluid inlet means is operably connected with fluid generating means whereby fluid is delivered to said exposure device through said fluid inlet means.

20 35. An exposure device according to any one of the preceding claims, wherein said exposure device further comprises a cell culture chamber support.

36. An exposure device according to any one of the preceding claims, wherein said exposure device is formed from a material selected from the group comprising PTFE, Stainless Steel, Perspex<sup>TM</sup> and Glass.

25 37. A method of supplying nutrient medium to cell culture chambers whereby nutrient supply means, medium directing means and cell culture chambers are mutually arranged to provide substantially contemporaneous nutrient medium replenishment at each of said cell culture chambers.

30 38. An exposure device for living cell cultures having a medium chamber common to a plurality of cell culture chambers and medium directing means, said cell culture chambers and medium directing means being mutually arranged so as to

provide substantially contemporaneous medium exchange at said cell culture chambers.

39. An exposure device substantially are hereinbefore described with reference to the drawings and examples hereof.